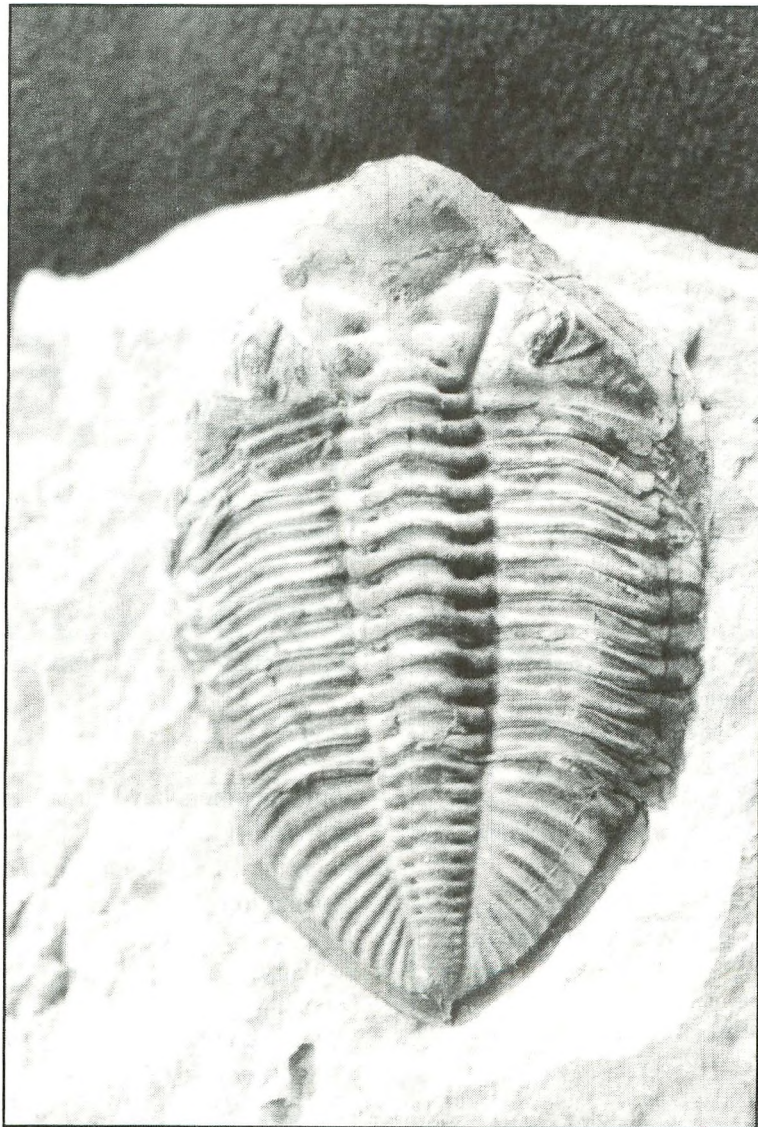


M·A·P·S *Digest*

Official Publication of
Mid-America Paleontology Society

Volume 22, Nos. 6
July-September 1999



MARK YOUR CALENDARS

Nov 13 MAPS MEETING**Cornell College Norton Geology Building, Mount Vernon, IA.**

1:00 Board & General Meeting Combined

2:00 Program by Cornell Professor

Oct 23 DINO MANIA**Lizzadro Museum, 220 Cottage Hill, Elmhurst, IL**

Dino expert, Dennis Kinzig discusses what is new with dinosaurs

2:00 (lasts 1 hour; reservations recommended: 630-833-1616)

Oct 29-31 FOSSILMANIA XVII, SPONSORED BY AUSTIN AND DALLAS PALEO SOCIETIES**Somervell County Expo Center, Hwy 67 in Glen Rose, TX**

Fri: 9 a.m. - 6 p.m.

Sat: 9 a.m. - 6 p.m. (Auction and Raffle Drawing at night)

Sun: 9 a.m. - 12 p.m.

Contact Bill Morgan (after 8:00 p.m.: 210-492-9163)**Nov 13-14 FLORIDA FOSSIL HUNTERS 8TH ANNUAL FLORIDA FOSSIL, MINERAL AND GEM FAIR.****National Guard Armory, 2809 S. Ferncreek Ave., Orlando, FL**

Sat: 9 a.m. - 6 p.m.

Sun: 9 a.m. - 4 p.m.

**Contact: Terry R. Angell, 226 Palmyra Dr., Orlando, FL 32807
407-277-8978; FOSSILFAIR@aol.com****Dec 3-5 CENTRAL TEXAS PALEO SOC. FOSSIL FEST****Old Settler's Park, located on Hwy 79, 3.3 miles east of IH 35, Round Rock, TX.**

Fri. 9 a.m. - 5 p.m.

Sat. 10 a.m. - 6 p.m.

Sun. 10 a.m. - 5 p.m.

Dealers, Exhibits, and Activities for the kids. A fun and educational experience for the whole family.

For information, call 512-794-0842**Feb 19-20 30th ANNUAL SHOW OF THE WILLIAMSON COUNTY GEM & MINERAL SOC. (Includes Fossils)****San Gabriel Park Community Center, Georgetown, TX**

Sat. 10 a.m. - 6 p.m.

Sun. 10 a.m. - 5 p.m.

Austin Paleo Soc. will provide fossil identification and demonstrations of fossil cleaning techniques.

Contact: Rochelle Margolis 512-864-0334**Apr 14, 15, & 16 MAPS NATIONAL FOSSIL EXPOSITION XXII—TEETH****Western Illinois University, Macomb, IL**

Fri., Apr. 14 8 am - 5 pm

Sat., Apr. 15 8 am - 5 pm

Sun., Apr. 16 8 am - 3 pm

Full information in December Digest. Request copies from Dale Stout. (Address on back page).

99/09 DUES ARE DUE

Are your dues due? You can tell by checking your mailing label. It reflects dues received by October 5. The top line gives the expiration date in the form of year followed by month--99/09 means 1999/September. Dues cover the issue of the Digest for the month in which they expire.

We do not send notices but will let you know if you are overdue by highlighting your mailing label and stamping your Digest. We carry overdues for two months before dropping them from our mailing list.

Please include your due date and name exactly as it appears on your mailing label--or include a label.

Dues are \$20 per U.S./Canadian household per year. Overseas members may choose the \$20 fee to receive the Digest by surface mail or a \$30 fee to receive it by air mail. (Please send a check drawn on a United States bank in US funds; US currency; a money order; or a check drawn on an International bank in your currency.) Library/Institution fee is \$25.

Make check payable to MAPS and mail to:**Sharon Sonnleitner, Treas.****4800 Sunset Dr. SW****Cedar Rapids, IA 52404****ABOUT THE COVER****sent by George L. H. Stone, Carterville, IL**

This month's cover photo is a trilobite from George's private collection. The fossil was found in a building block of an old mill. (One never knows what treasures might be hidden in old stone buildings.) The specimen is *Synphoria stemmata* (x .9) from the Shriver Fm., Center Co., PA

MAIL LABEL—DUE DATE FOR 2000+

Some members have already paid dues for the year 2000 or later, and the method I am using to code due dates on the labels may not be apparent to all. Therefore, please note this explanation.

So that the computer will pick out and print address labels for members with expiration dates past 1999 as well as those in '99, I am using the form "99 / __" for due dates starting in 2000. If your due date is in 2000, your label will start with 990/__. Similarly, 992/__ indicates a due date in 2002, etc. With the system I now have the database on, I probably could revise the method, but I have not yet had time to experiment with it. And since I know this method works, I probably will be using it for quite a while.

FROM THE EDITOR

A meeting was not held in conjunction with the summer picnic this year because we lacked a quorum. Also, the October meeting was canceled because of a cancellation of the scheduled program. So, there is no business to report at this time.

However, as we advance into the fall, we begin to make plans for next year's EXPO. "Teeth" was chosen for the theme, so those of you who are experts and can write an article or know of someone who can, please contact Maggie Kahrs (812-522-6093), the EXPO *Digest* editor. We turn out those great EXPO *Digests* each year because of the generous contribution of articles by members and friends.

LETTERS TO THE EDITOR

Dear Mrs. Sonnleitner:

I would be interested in B.L. Stinchcomb's authority with his comments on my article, "Fossil Impressions of Mistaken Point," February Volume 22, No 2.

The statement on "jellyfish, sea anemones, sea fans, etc." came from a Canadian Government publication "Mistaken Point Ecological Reserve" paper. It stated the closest relatives would be jellyfish, and sea anemones.

Dr. Guy M. Narbonne, Department of Geological Sciences, Queens University, Kingston, Ontario, Canada, also used the term soft-bodied organisms, first described from Newfoundland. He referred to Ediacaran fossils and living groups of jellyfish, soft corals, annelid worms, etc., in his article "The Edicara Biota" published by the Geological Society of America, February 1998, Vol 8 #2.

As for correcting the spelling of the fossils sketched I would be interested in Mr. Stinchcomb's source. My data came from the M.M. Anderson, Department of Biology and Geology, Memorial University of Newfoundland article mentioned. The handwritten information was difficult to decipher. I typed the names to improve clarity. My apologies.

Letters to Dr. Narbonne, the Memorial University, the Newfoundland Museum and the Canadian Parks Division, for confirmations of the names and seeking some other authoritative sources were not answered.

If Mr. Stinchcomb has an officially recognized source on these fossils, I would appreciate being advised about it.

Sincerely, F.H. Lewis (MAPS member)

FROM THE PALEO SOCIETY

Dear Sharon,

Thank you for sending the \$100 contribution from MAPS for the Strimple Award Fund. Each year we use money from this fund to pay the travel expenses for the recipient of the Strimple Award to our national meeting. This award is one way for the Paleontological Society to show its appreciation for the support of amateur paleontologists to the science of paleontology.

Sincerely, Thomas W. Kammer, Treasurer

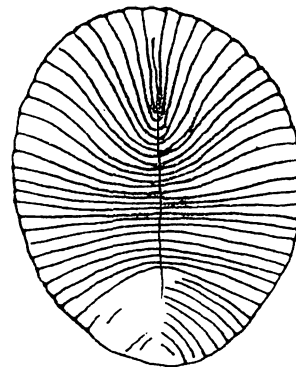
Dear Sharon,

The following may or may not be worth putting in the next Digest. At least it shows that we are reading each edition.

I refer to 'Fossil impressions at Mistaken Point revisited' by Bruce Stinchcomb (MAPS Digest 22 (3&5), P. 10), in which he attempts to correct the spelling of generic names in F.W. Lewis's earlier article about the Mistaken Point fossils (MAPS Digest 22 (2), p. 3-6).

While Stinchcomb's spelling of *Mawsonites* and *Cyclomedusa* are correct, his "Dickasonia" should read *Dickinsonia*; *Charnodiscus*, *Charniodiscus*; and "Ptendinium", *Pteridinium*.

Without access to recent literature, I cannot comment on Lewis's illustration labeled "Dickinsonia" — it certainly is not the worm-like *Dickinsonia* (see sketch). In addition, I do not understand Stinchcomb's reference "these generic names are really not valid!" The names are indeed valid, but of course may not be the correct genera to which some of the Mistaken Point fossils should be assigned.



Reference: Glaessner, M.F., 1984. *The dawn of animal life*. Cambridge University Press, Cambridge (UK), 244pp.

Yours sincerely, Frank Holmes (MAPS member from Australia)

P.S. If it is of interest to members, The Ediacaran Fauna (in Australia) was discovered by R. C. Sprigg, then Assistant Government Geologist of South Australia, in 1946 and initially described in the Transactions of the Royal Society of South Australia (1947 and 1949), not the 1950s as suggested by Mr. Lewis.

FCH

SNOWY RANGE STROMS AND ENIGMAS

by Bruce L. Stinchcomb

The Medicine Bow Mountains rise to 12,000 feet in southeastern Wyoming, particularly in the Snowy Range, the highest part of these mountains. The Snowy Range is named "snowy" not for the snow fields which remain year round on the peaks, but rather from the peaks' being composed of white quartzite, outcrops of which crown the highest elevations. This quartzite (metamorphosed sandstone) forms part of a sequence of 2.3-2.4 million-year-old sedimentary rocks which have been uplifted to form part of the Medicine Bows. This sedimentary sequence is thick, possibly some 25,000 feet of shales (now slates and phyllites), sandstone (now quartzite of varying colors, but mostly white), iron formation and limestone and dolomite. This sequence was deposited during the early Proterozoic, and this sequence, particularly in the limestones and dolomites, can be fossil-bearing.

That sleuth of Precambrian fossils, Charles D. Walcott, surprisingly never visited the range and its interesting sediments. Perhaps the mountains of the Colorado Front Range, just to the south of the Snowy Range and the Colorado Mountains expanse of gneiss and granite discouraged him from any paleontological quest to the north. Or perhaps it was the construction of a highway over the mountains (today's Wyoming Hwy 130) in the late 1920s, which made the uplands more accessible, came too late for Walcott, who died in 1927. Walcott, in any case, would have found the rock sequence of interest since it contains Precambrian fossils.

What is found in these ancient rocks? A variety of the cabbage, onion and cup-shaped fossil structures called stromatolites, for starters. Medicine Bow Mt. stromatolites also come in a variety of forms. Some are huge! The well known *Fossil Book* by the Fentons, and recently revised and reprinted, illustrates one of these gigantic stromatolites. This is a massive structure altogether awesome in size, particularly so when considering that stromatolites are produced by the metabolic activities of microscopic organisms, the cyanobacteria. Work by the Fentons appears to be the earliest mention of these stromatolites (Fenton and Fentons, 1931). A variety of forms occur, including the cabbage-like *Cryptozoon*, first described by James Hall from Cambrian rocks of upstate New York.

Besides the variety of stromatolites which occur, what have been presented as possibly the tracks of "worms" have also been described from quartzites of the Snowy Range (Kauffman and Steidtmann, 1981). These "worm track" trace fossils occur on bedding planes of some of the thick sandstone (quartzite layers). If they were made by organisms burrowing into or moving over a sandy sea floor, they represent the earliest known fossil occurrence of animals or animal-like organisms capable of movement. The first appearance of animal life (metazoans) is problematic and unclear. These burrow-like "fossils" occur much farther back in geologic time than do most other similar animal trace fossils. If, indeed, they are trace fossils, there is a possibility that some form of aggregate of moneran cells (cyanobacteria, the organisms primarily responsible for stromatolites are monerans) might have evolved in the mid-Precambrian to form an animal-like organism capable of movement. These Snowy Range tracks would have not been made by animals which appeared in later geologic time as animals are composed of mono-nucleate eukaryotic cells. Monerans have no cell nucleus and belong to a kingdom separate from the animal kingdom. There are a number of puzzling Precambrian fossils and dubiofossils known, and with the Precambrian covering some 80% of geologic time, a lot of time was presumably available for biologic "experiments."

(A Personal Involvement)

Exploring parts of the Snowy Range, I found another puzzling fossil a few years ago. These are closely spaced "tubes," parallel to each other and exhibiting an internal series of wavy lines. They occur at about 70 degrees to the quartzite bedding planes and are best seen in very thin slices of the quartzite. At one of the paleontological conventions a few years ago, I exhibited some of these and got a variety of explanations for them, but most agreed that they were probably fossils. I thought myself that they might be comparable to the "tracks" described by Kauffman and Steidtmann and showed them to Karl Kauffman. He decreed them not to be related to the "tracks" he described in his 1981 paper. I showed them to Hans Hoffman, a Canadian stromatolite person; he thought

they were possibly (probably) some sort of stromatolite and suggested I do a formal paper on such. This I've not pursued; however, this MAPS article is the first mention of them. These fossils (and I believe as do most others that they are fossils) are distinctive and pronounced. Other than mention of them here, I'm not going to say anything more regarding them and am certainly not going to propose some sort of name. The reason: a real can of "worms" (and not the fossils kind) would result. Publication of a name of an organism establishes priority of that name. MAPS *Digest* is not

a refereed publication (viz., it's not reviewed by a peer or peers). The coining of a moniker for a new-to-science fossil or living organism in a non-peer-reviewed publication like MAPS *Digest*, creates nomenclatural havoc in the world of zoological and paleontological nomenclature. I will just state here that these things exist, they are interesting, and more shall have to be known about the Precambrian fossil record before one can really cast judgement upon them. It's things like this that make fossils so much fun after the "newness" of trilobites, crinoids, or fish wears off.

BOOK REVIEW

Cradle of Life by J. William Schopf

by B. I. Stinchcomb

This interesting book covers the quest for, discovery and significance of some of the oldest known fossils. It relates to how these fossils became "a court of last resort" in the unraveling of the "story" of the early development of life. There is lots here on Precambrian fossils, including stromatolites and the puzzling Ediacaria fossils. It has material also on the putative Martian "fossils," on *Eozoon*, pseudofossils, and other interesting stuff. A good read for anyone interested in science and particularly so for the scientifically orientated fossil aficionado. Schopf focuses, perhaps a bit too much, on his group of researchers and discoverers, who did, however, uncover much of a significant new branch of paleontology. A number of persons who also contributed or contribute extensively to this fascinating subject, such as Hans Hoffman, Charles Butts, Mark McMenamin and other workers who discovered and pondered Precambrian fossils, are not mentioned. Others who were concerned with them, such as C.D Walcott and Preston Cloud are adequately covered. The book is attractive; it can be read on several levels; and for \$29.95 hardbound, it is a bargain. If you have any interest in that era which makes up 90% of geologic time, the Precambrian, this book definitely would be of interest.

Cradle of Life

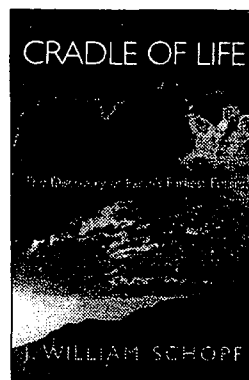
The Discovery of Earth's
Earliest Fossils

J. William Schopf

One of the greatest mysteries in reconstructing the history of life on Earth has been the apparent absence of fossils dating back more than 550 million years. The quest to find such fossils began in earnest in the mid-1960s and culminated in one dramatic moment in 1993 when William Schopf identified fossilized microorganisms three and a half *billion* years old.

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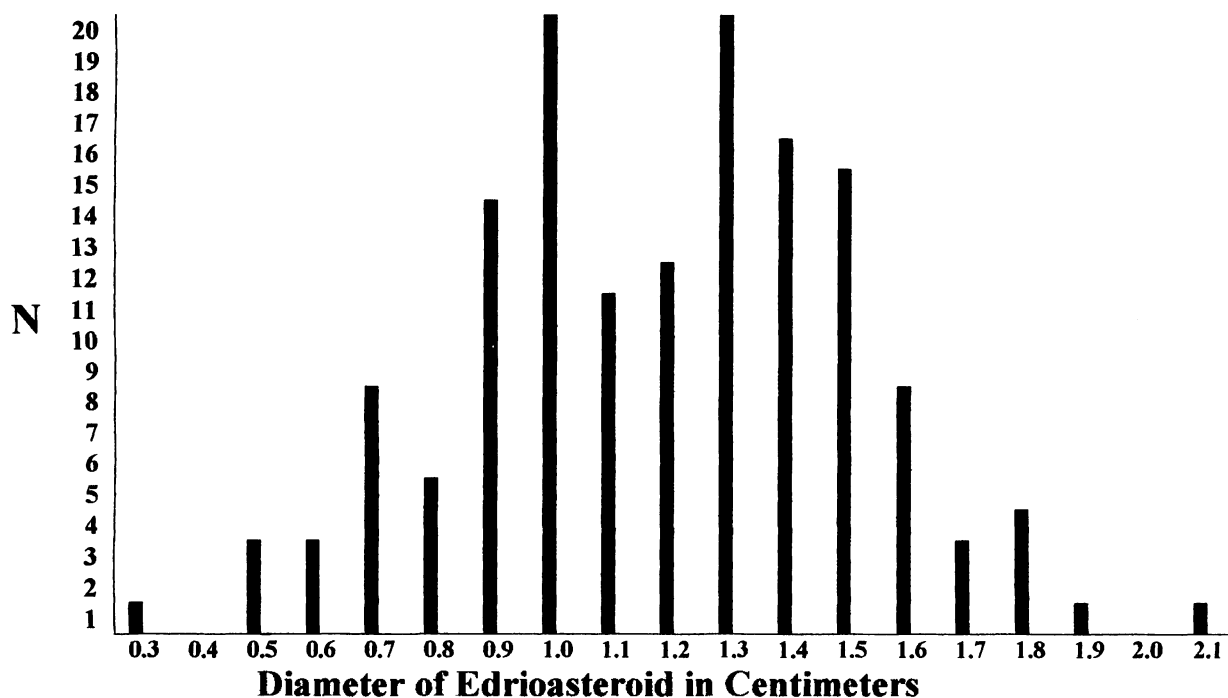
EVIDENCE FOR SPORADIC GROWTH BURSTS IN EDRIOASTERIODS

By W. Bruce Gibson

Several years ago I collected numerous specimens of the edrioasteroid, *Isorophus cincinnatiensis*, from a single site in the Fairview formation of the Upper Ordovician in Cincinnati, Ohio. All of the specimens were relatively small, measuring about 2 cm or less in diameter. I cleaned them all and prepared them for trading at MAPS. At about the same time, I read an article in the journal *Science* that discussed the reproductive habits of present day echinoderms. The article indicated that instead of reproducing randomly throughout the year, the echinoderms under study reproduced only when food sources were most readily available for the young. Since I had a relatively large number of edrioasteroids ($n = 145$) from a single site, I decided to test whether my specimens represented a single randomly producing population or whether there

was evidence for two or more separate generations.

If my sample of *Isorophus cincinnatiensis* represented a randomly producing population, and if the diameter of each edrioasteroid was directly related to its age, then a plot of the number of individuals vs. edrioasteroid size should produce a graph that could be fit to a single continuous bell-shaped curve with one maximum value. In population statistics, this is called a normal Poisson distribution. However, if my sample represented several distinct generations, then the plot should show evidence of two or more overlapping bell-shaped curves, each with its own maximum value. The plot constructed from the data for my sample is shown below.



Based on this limited number of individuals, the graphical data suggest that there were at least two different generations represented in my sample, and possibly even more than two. More definitive data might have been obtained if a larger sample size had been studied, possibly by evaluating specimens collected from the site by others. Unfortunately, my analysis was done after the collecting site was lost to construction and specimens collected by others had

already been available for trade. Samples open for trade would be suspect, because the edrioasteroids remaining would likely be biased toward the smaller individuals. Nevertheless, the data collected provide evidence that *Isorophus cincinnatiensis* reproduced in periodic bursts, rather than continuously throughout the year. A possible explanation for such reproductive bursts is the periodic abundance of food sources for the progeny.

LITTLE KNOWN FACTS ABOUT FOSSILS

by Marc Behrendt

*The following facts were gathered by observation
(or could it have been the heat?)*

Trilobites, as well as other cherished fossil types, are nocturnal, coming out only at night and slipping away into hiding shortly after daylight. That is why collectors must start so early.

Trilobites chirp. I stayed over at a friend's home in his guest bedroom, which is directly off his beautiful and well-stocked trilobite showroom. For an hour before I went to bed, I carefully examined all the specimens, amazed at the number and quality of the bugs he collected. Later, after finally dozing off, I awoke to the distinct sound of chirping coming from the cases.

Fossils are ionized. That is why some people find so many, and others find so few. Let me give an example. While collecting with several friends in the middle of the Nevada desert, I was having no luck. The others were finding an occasional trilobite. However, one particular friend was doing a great deal of finding. On his way to the truck to deliver a load of specimens, he passed by my dig site. At that moment, I found the first trilobite of the day. Upon his return, I had him stand in my pit for several seconds. When he jumped out, the first piece of shale I turned over possessed the biggest trilobite of the day, in perfect condition! My finding drastically improved, but the then tapered off. Again, my buddy jumped into my pit, and I soon found another quality trilobite. What more proof do I need than that? Some fellows are just more ionized than others, and they should share any excessions with those ion-compromised individuals to lure fossils into range.

THE ROYAL TYRRELL MUSEUM OF PALEONTOLOGY

by Jim and Sylvia Konecny

This past July we had the opportunity to visit The Royal Tyrrell Museum of Paleontology in Drumheller, Alberta, Canada. This is by far the finest museum that we have ever visited. The displays are superbly arranged and are set up in chronological order. A pamphlet directs you though the museum on a "trail" from the Precambrian to the Pleistocene. There is also a "paleo conservatory" of plants that are directly related to plants from as far back as the Pennsylvanian Period. The most spectacular display is the dinosaur hall. However, our favorite is the 12x diorama of the Burgess Shale sea—it is fabulous. There are attendants in various locations ready to answer your questions and there are several locations where one can view preparators at work. We highly recommend that anyone interested in paleontology visit this fantastic museum.

We were **also** fortunate to have been there when the feathered dinosaurs of China were on temporary display. This was certainly a most memorable occasion.

REMOVAL OF FOSSILS FROM A LARGE ROCK

by Bud Plasil

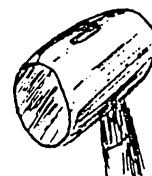
from *Earth Science News* 11/84

via Dinny's Doin's 4-5/92 and Paleo Newsletter 7/92, Jean Wallace, Ed.

Types of hammers and chisels used and how to chip away from the fossil so the shock waves do not damage it.



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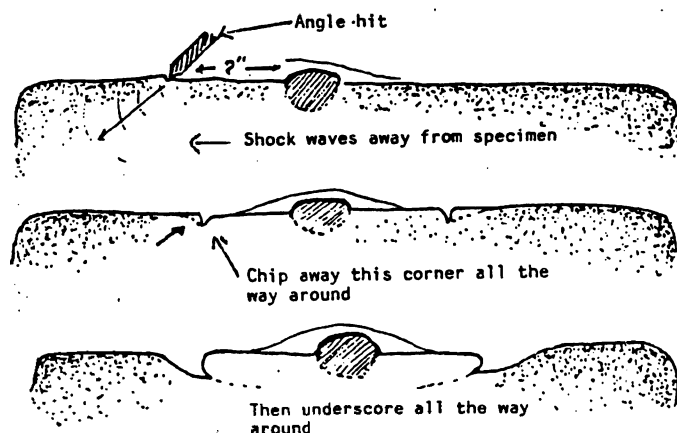
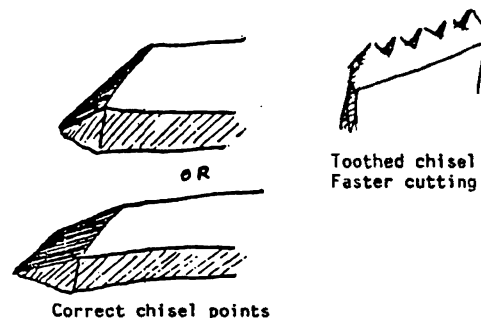
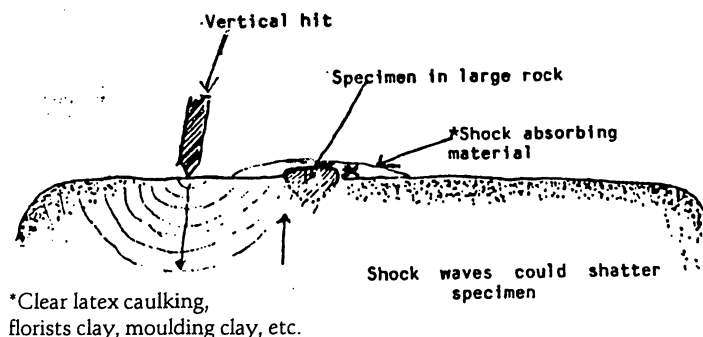
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By using the method below, you do not need to haul a large rock home. It enables you to take much smaller amounts of rock, cutting down on the weight of rock you have to carry. Some of these tools are a 3-pound hammer, pointed and sawtooth chisels and rubber latex caulking. The diagrams explain the removal of a fossil from a large rock.



Only experience with the characteristics of the quarry rock can determine when a sharp blow at the under-

scored edge can be made.

**PLEASE ADD THE FOLLOWING NEW OR REJOINING MEMBERS
TO YOUR DIRECTORY:**

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Teacher. Major interest Ordovician fossils--particularly scolecodonts, graptolites, and trace fossils. Then, all others. Member of Dry Dredgers, Cincinnati.

David Williams
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Physician. Major interest trilobites. A beginner (99)

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Chicago IL 60643-1639
773-445-4988
fx: 773-445-4588
jjfcfc@aol.com

MINERALS OF ARIZONA — INCLUDES TOPO MAPS**by Margaret E. Kahrs**

The Field Guide for Collectors *Minerals of Arizona* is an excellent book for the beginner as well as the seasoned collector. Rockhounds are always searching for locations to collect minerals a, and author Neil R. Bearce has certainly given enough places to keep them busy for quite some time.

A lot of work and study went into the making of this book, and it will be truly appreciated by collectors. The photographs are fantastic with such detail.

The Topographical maps are a welcome sight for all.

The pronunciation guide is a must for beginners and will be used by all who own one of these books. With the price so reasonable, everyone should own one.

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The **M**id-**A**merica **P**aleontology **S**ociety (MAPS) was formed to promote popular interest in the subject of paleontology; to encourage the proper collecting, study, preparation, and display of fossil material; and to assist other individuals, groups, and institutions interested in the various aspects of paleontology. It is a non-profit society incorporated under the laws of the State of Iowa.

Membership in MAPS is open to anyone, anywhere who is sincerely interested in fossils and the aims of the Society.

Membership fee: One year from month of payment is \$20.00 per household. Institution or Library fee is \$25.00. Overseas fee is \$20.00 with Surface Mailing of DIGESTS OR \$30.00 with Air Mailing of DIGESTS. (Payments other than those stated will be pro-rated.)

MAPS meetings are held on the 2nd Saturday of October, November, January, and March and at EXPO in April. A picnic is held during the summer. October through March meetings are scheduled for 1 p.m. in Trowbridge Hall, University of Iowa, Iowa City, Iowa. One annual International Fossil Exposition is held in April.

MAPS official publication, MAPS DIGEST, is published 9 months of the year—October through April, May/June, July/August/September.

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